No. 615,747. Patented Dec. 13, 1898.

J. E. RICHARDSON.

PNEUMATIC HORSE COLLAR.

(Application filed Aug. 28, 1897.)

(No Model.)

Fig. 1.

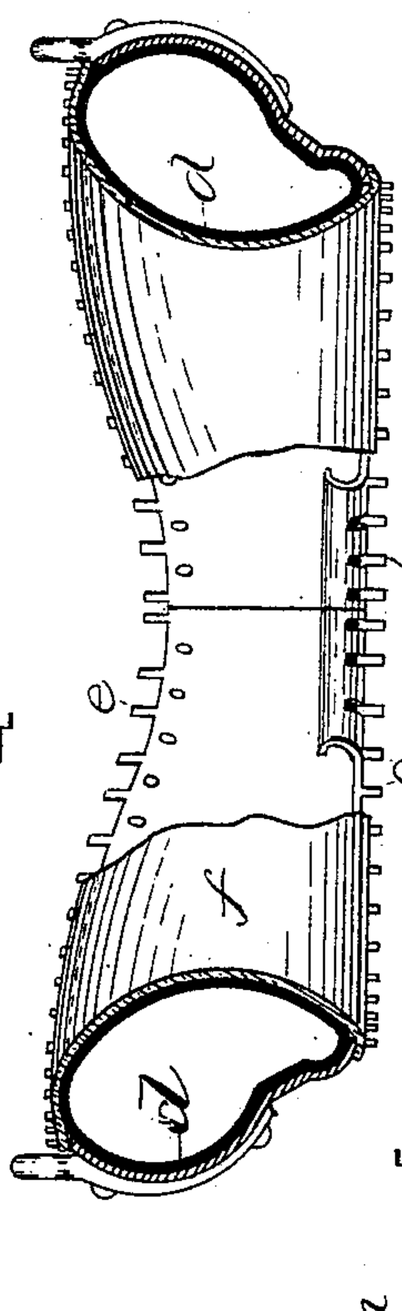


Fig. 2.

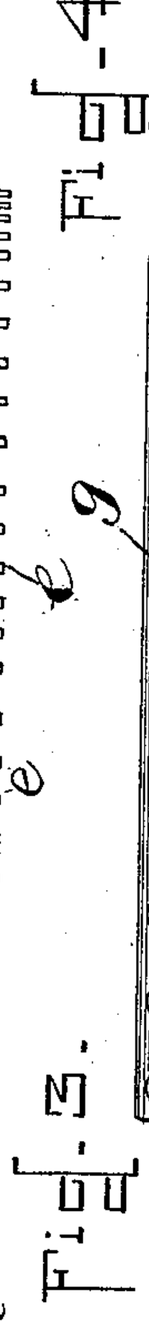


Fig. 3.

Fig. 4.

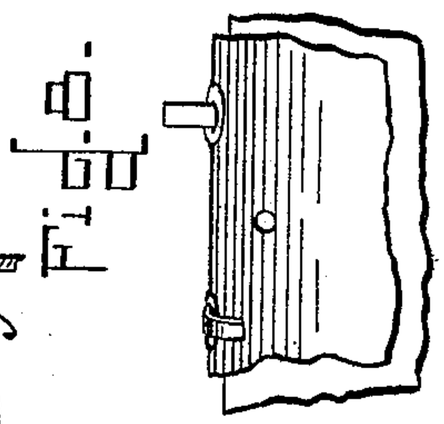


Fig. 5.

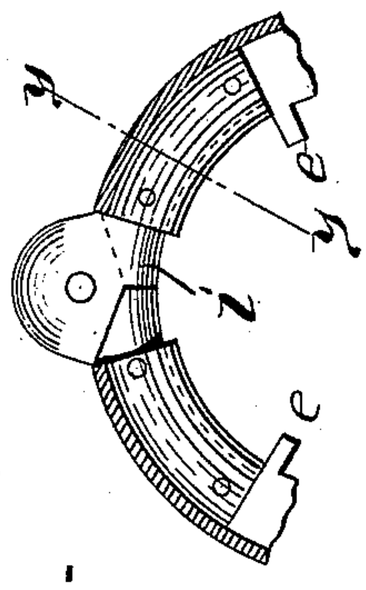


Fig. 6.

Fig. 7.

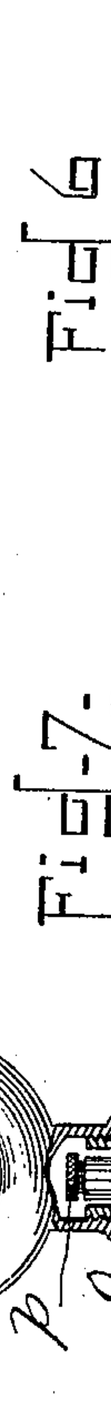
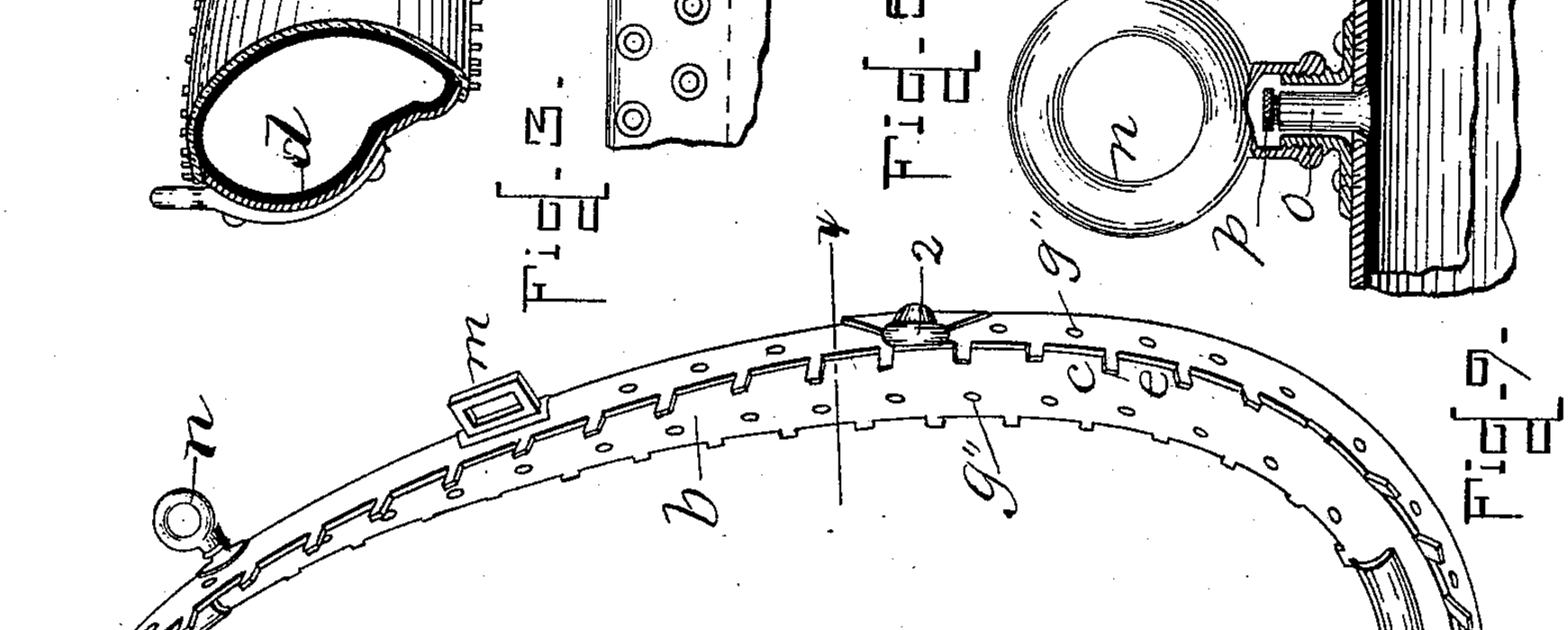


Fig. 8.



Witnesses.
C. B. Crocker
A. J. Dailey.

Fig. 1.

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UNITED STATES PATENT OFFICE.

JOEL E. RICHARDSON, OF SALEM, NEW HAMPSHIRE.

PNEUMATIC HORSE-COLLAR.

SPECIFICATION forming part of Letters Patent No. 615,747, dated December 13, 1898.

Application filed August 28, 1897. Serial No. 649,873. (No model.)

To all whom it may concern:

Be it known that I, JOEL E. RICHARDSON, of Salem Depot, in the county of Rockingham and State of New Hampshire, have invented certain new and useful Improvements in Pneumatic Horse-Collars, of which the following is a description sufficiently full, clear, and exact to enable those skilled in the art to which it appertains or with which it is most nearly connected to make and use the same.

This invention has relation to a "pneumatic" horse-collar, so called, which consists of a metallic frame maintaining in proper position an air-cushioned pad or pads which bear directly upon the shoulders or other parts of the horse or other animal upon which they are used.

The invention has for its object the provision of various improvements suggested by practical experience whereby the collar is rendered more economical of manufacture, more serviceable and ready of manipulation, and more durable than articles of the kind now in use.

To these ends the invention consists of the improvements in the construction and mode of operation of the several parts and of the device as a whole, all as I will proceed to set forth, employing the best form now known to me for constructing and using the invention.

Reference is to be had to the annexed drawings, and to the letters and numerals marked thereon, forming a part of this specification, the same letters and numerals designating the same parts or features, as the case may be, wherever they occur.

Of the drawings, Figure 1 is a view of the frame or shell of the collar, looking at the same from the rear. Fig. 2 is a sectional plan view of the lower portion of the collar in complete form, a part of the same being represented as broken away and the section being taken on the line $x\,x$ of Fig. 1. Fig. 3 is a view of a portion of the leather or other covering for the pad. Fig. 4 is a transverse vertical sectional view of what is represented in Fig. 3. Fig. 5 is a sectional view of the upper part of the two main members, showing how they are hinged together and showing also their construction at this point. Fig. 6 is a detail view of the lower portions of the main members, showing the manner of connecting the same by means of a clasp. Fig. 7 is a sectional detail view of either the parts represented in Figs. 5 or 6, giving an idea of how the same may be formed. Fig. 8 is a detail view of a part, showing how the covering for the pneumatic pad may be attached to the shell. Fig. 9 is a sectional detail view showing the preferable location of the inflating-valve.

In carrying out my improvements I form the main members of the collar $a\,b$, comprising the shell or frame, of metal of suitable character and form adapted to be hinged together at the top and connected at the bottom by a clasp or latch. The said shell or frame is of course made to conform in general to the horse's neck or shoulders, so that the inflated pad with which it may be provided may fit or "set" exactly, or as nearly exactly as may be.

In the hollow c of the shell is placed an elastic air-tight pad d, capable of being inflated by air to any desired degree.

On the edges of the shell or frame are formed projections or teats e, which may be, as shown, integral parts of the shell. Perforations g'' are formed in the shell near the edges between said projections e. The said projections and perforations are provided to serve as a means for securing the leather covering f over the pneumatic tube d.

The covering f has been spoken of as leather, though it is obvious that it may be composed of any other suitable material, and, while the covering may be secured to the shell in several known desirable ways, that hereinafter explained has been found to be efficient and economical.

In Fig. 3 the covering f is shown as provided near its edges with two rows of eyeleted holes $g\,g'$, arranged in staggered order, the holes of one row being opposite the spaces between the holes of the other row, the edge of the leather having first been turned down as a hem. Thus the eyelets serve the double purpose of holding the turned-down edge so as to form a hem and also of enabling the cover to be securely attached over the pad d. Under these conditions the eyelet-holes g may be arranged on the projections e, the covering laid back upon the face of the shell, the projections be turned over and clenched upon

the covering, the latter be fastened with rivets, cord, or wire to the shell through the holes g' in the leather and the holes g'' in the metallic shell, and the covering then be folded back over the pad d and its other edge secured to the inner edge of the shell by means of the projections and rivets or projections and cord or wire, as may be best; or, to begin with, the edge of the covering may be laid upon the outer surface of the shell and be fastened with rivets, cord, or wire thereto through the eyelet-holes g, the projections e be passed through the eyelet-holes g' and clenched, and the covering carried over the pad and its other edge secured to the inner edge of the shell in a manner similar to that described.

By providing the edge of the pad-covering with eyeleted holes, as described, a varied and easy mode of fastening is prepared. Of course a single line of eyeleted holes may in some cases be all that is necessary in conjunction with the shell having the projections e at its edges. The said projections on the edge of the shell I consider an important feature of my invention.

At the top of the two members $a\,b$ they are provided with such construction as will enable it to be formed into a hinge, as seen at i in Fig. 5, or any other form of hinging of the parts may be provided that will operate successfully and not catch into the skin or hair of the animal. Both at the top and bottom the ends of the members a and b have their inner parts turned over, as indicated in Figs. 5 and 7, so as to form rounded portions at these points in order to insert and fasten the hinges on the top and the clasp and catch on the bottom and in order that they may be better suited to fit the animal without chafing, and at the bottom or top, if need be, the turned-over portion may have projections e punched out therefrom and through the openings thus made rivets be inserted to fasten the hinge at the top and to fasten the clasp and catch at the bottom, as may be understood by reference to Figs. 2 and 6.

At the bottom, where the ends of the members come together, one member will be provided with a catch j, as is shown in dotted lines in Fig. 6, and a coöperating latch k (also shown in dotted lines in said figure) may be arranged in and connected with the opposite member to coöperate with the catch j.

It is not necessary with my invention to provide the collar with any means for connecting the hames therewith, since the tugs or traces may be connected with the tug-eyes 2 2, directly connected with the casing or shell of the collar, as is represented in Fig. 1, and the said shell may also be provided with eyes m for back-straps when the collar is used in connection with double harness and with eyes n when the collar is used with single harness.

As a suitable and convenient manner of inflating the pad d I provide the latter with a valve-stem o, (see Fig. 9,) which valve-stem projects through or into the base of the member upon which the rein-eye n is secured. By removing the rein-eye and the cap p from the valve-stem a pump may be applied to the said valve-stem and the pad of the collar inflated to any desired degree, all as will be readily understood without further description.

By my invention I secure a very economical means of constructing a combined pneumatic padded collar and hames and have all of the parts coöperate so as to produce an article of the kind mentioned of the most efficient and durable character.

Having thus explained the nature of the invention and described a way of constructing and using the same, though without attempting to set forth all of the forms in which it may be made or all of the modes of its use, it is declared that what is claimed is—

1. A pneumatic horse-collar, comprising in its construction the metallic shell provided with projections e on each edge and a series of perforations near the edge between the projections, the pneumatic pad, the covering provided with two rows of eyeleted holes, the holes of one row being opposite the spaces between the holes of the other row whereby the covering may be fastened to the shell by rivets, cord or wire passed through the perforations of the shell and through the holes of one row in the covering and further secured by means of the said projections of the shell and the holes of the other row in the covering.

2. The combination, with the shell and pad, of a valve-stem secured to the pad and extended through the shell, a base for a rein-eye into which the said valve-stem extends, and the rein-eye removably connected to said base.

3. The combination, with the metallic shell and its edge projections, of the cover having doubled-over edges and eyeleted holes, the eyelets thereof securing the edges in doubled condition and being secured on said projections, the doubled-over portion bearing upon the edge of the shell to keep the latter from cutting the cover.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, this 19th day of July, A. D. 1897.

JOEL E. RICHARDSON.

Witnesses:
LIZZIE N. RICHARDSON,
JAMES E. YOUNG.